AP Statistics Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chapter 4 In-class Review Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Let x = 3.5, y = 9.3, x = 1.2, y = 2.4

Find each of the following:

a) 3x + 6 b) x – 8.2 + 1.5y  b) 4x + 2y

3x + 6 x – 8.2 + 1.5y  4x + 2y

2) P(A) = 0.61 and P(B|A) = 0.4

a) What is P(A B)? b) Are A and B disjoint?

3) A and B are independent events. P(A) = 0.73 and P(A  B) = 0.24. What is P(B)?

4) P(M) = 0.36 and P(D|M) = 0.27. what is P(D  M)?

5) A continuous random variable X has the distribution as shown below.

Find:

a) P(0.2  x  3) b) P(2.5  x  4.3) c) P(x = 1.3)

6. Discrete Random Variable Q has the distribution shown below.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Q | 0 | 1 | 2 | 3 | 4 | 5 |
| P(Q) | 0.2 | 0.4 | 0.1 | 0.05 | 0.15 | 0.1 |

a) Find Q. b) Find Q.

7. The probability of picking a blue chip out of a bag is 0.26. I pick 4 chips out of the bag (with replacement).

a) Create a probability distribution.

b) Find P(X ≤ 3) c) Find P(X = 1)

d) Find P(1 ≤ X < 4) e) Find P(X ≠ 2)

8. P(A) = 0.26, P(B) = 0.41, P(A B) = 0.1

a) Find P(A  B). b) Find P(B|A).

c) Are A and B disjoint? d) Are A and B independent?

9) P(A) = 0.6, P(B) = 0.34, P(B|A) = 0.2

a) Find P(A  B). b) Find P(A  B).

10. An office receives 60% of its ink cartridges from Office Max and the rest from Staples. Suppose that 5% of the cartridges are defective from Office Max. 3% of the cartridges are defective from Staples.

1. What is the probability that an ink cartridge is defective?
2. An ink cartridge is defective. What is the probability that it is from Office Max?
3. An ink cartridge is defective. What is the probability that it is from Staples?

11. Random Variables X and Y have the following distributions:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| X | 1 | 2 | 3 | 4 |
| P(X) | 0.1 | 0.1 | 0.5 | 0.3 |

|  |  |  |  |
| --- | --- | --- | --- |
| Y | 0 | 1 | 2 |
| P(Y) | 0.3 | 0.2 | 0.5 |

Find their joint probability distribution if X and Y are independent.

12. X and Y are random variables with the following joint distribution. Find their individual probability distributions.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | Y | | |
|  |  | 2 | 3 | 4 |
| X | 0 | 0.2 | 0.1 | 0.25 |
| 1 | 0.05 | 0.05 | 0.05 |
| 2 | 0.09 | 0.03 | 0.08 |
| 3 | 0.01 | 0.07 | 0.02 |